

ASSESSING ELECTRONIC HEALTH LITERACY IN MUAR: SURVEY IN BANDAR MAHARANI AND PARIT JAWA

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ABSTRACT

Introduction

Health information online had been accessible since the emergence of the internet. People in Muar, Johor, Malaysia has easy and affordable access to internet resources, therefore, electronic health (eHealth) literacy is important to assess and identify health information online.

Objective

The aim of this study was to investigate eHealth literacy levels across internet users in Muar between 2 different locations (Bandar Maharani and Parit Jawa) and compare the eHEALS score between them.

Methods

A survey was used to collect data about related information. The eHealth literacy scale (eHEALS) was measured using a 5-point Likert scale. An independent-samples t-test was used to determine statistical significance between eHEALS score against locations (urban and rural). Also, frequency was tabulated for types and reasons seeking health information online along with types of social media channels for accessing online health information.

Results

As a result, it was shown that people in Bandar Maharani had higher eHEALS score (29.21) compared to those in Parit Jawa (24.26). The age group of 26-35 in both locations demonstrated the highest eHEALS frequency (n=50, n=57) compared with other age groups.

Conclusions

It was shown that people in Bandar Maharani had more confidence in their ability to access health information online compared to those in Parit Jawa. Considering this finding, the government should increase efforts to promote online health information seeking to people in rural areas such as Parit Jawa to improve their understanding towards health literacy.

Keywords: eHEALS; eHealth literacy; electronic health information; digital divide; electronic resources.

INTRODUCTION

Background Study

Today, the internet is being widely used to seek for any information online and social media has become a platform for people to either share or receive information. Among the many purposes of the internet, it is notably a popular destination for individuals seeking information about health, diet, and lifestyle (Bidmon & Terlutter, 2015). According to Chesser, Burke, Reyes, and Rohrberg (2016), there has been a rise in the propagation of electronic health (eHealth) applications (apps) that support health care delivery. Despite this increasing supply of health-related information online, many individuals are not able to use this information to make informed health decisions (Neter & Brainin, 2012). This is because seeking health information online requires eHealth literacy, which is defined as the ability to read, use computers, search for information, understand health information, and put in into context (van der Vaart et al., 2011).

However, there is no denying in the fact that there is a digital divide existing among the people today. This digital divide refers to unequal and disproportionate pace of development in societies in having access to digital infrastructure and services (Paul, 2002). According to Urban Area (2019), the internet facilities provided to certain demographic areas such as urban and rural areas are not the same. This translates to a discrepancy in eHealth literacy in both urban and rural areas worldwide. There is a unique pattern when it comes to seeking health information online in both urban and rural areas respectively (Chesser, Burke, Reyes and Rohrberg, 2016). The urban residents are familiar with eHealth information and engage well in seeking information online (Bidmon & Terlutter, 2015). Not only are rural residents less likely to be familiar with eHealth, for those who do, the literacy levels are much lower (Urban Area, 2019).

Problem Statement

According to Kemp and Hootsuite (2019), Malaysia was ranked top five globally and highest in Southeast Asia for mobile social media penetration. Therefore, in a country with a large number of population having the privilege to access the internet, a high eHealth literacy rate among the general population is vital for an effective management of health conditions and improve the overall health of the general population. Given that a discrepancy in internet usage and eHealth knowledge exists between both urban and rural areas in Malaysia, this study is aimed at understanding the trend of eHealth literacy between Bandar Maharani (urban) and Parit Jawa (rural). This study is also aimed at understanding a pattern in the types of health information sought online, the reasons for seeking them and also the usage of social media platform to seek for online health information.

Objectives

The main objective of this study is to obtain information on the exposure of the people in Bandar Maharani and Parit Jawa towards eHealth and their competency in seeking for health information independently. The specific objectives are as follows:

- a. to assess electronic health literacy level between Bandar Maharani and Parit Jawa in Muar, Johor.
- b. to identify the types of eHealth information searched online.
- c. to determine the reasons for seeking eHealth information online.
- d. to describe the utilization of various social media for assessing online health information.

Significance of study

Assessing the level of eHealth literacy in Bandar Maharani and Parit Jawa can help us get an understanding on the perceived ability of the respondents in seeking health information online and the utilization of eHealth tools and their effectiveness towards the population in these areas. This study can also find new and effective ways to raise the eHealth literacy rate in our local area of research.

LITERATURE REVIEW

Please refer to the list of references given.

METHODOLOGY

Study Design and Sample

A cross sectional study design was used after obtaining the necessary ethical & broad survey between the population in Bandar Maharani and Parit Jawa. Self-administered questionnaire was administered to the population together with the data of Simple Random Sampling. However, there were a total of 350 respondents in Bandar Maharani and Parit Jawa. This study was carried out on the respondents aged minimum 16 years old and above in the midweek of October 2019.

Survey Instrument

This study was carried on by distributing the questionnaires to the respondents. The questionnaire was divided into 5 sections:

First, the demographic information of the target population such as the age, gender, race, educational level and work status.

Second, is to assess the eHealth literacy level using the 8 items of eHEALS. Respondents will rate their level of agreement towards eHealth with each of the 8 items on the scale of 1 to 5, with 1 being the lowest and 5 is being the highest.

Third, the respondents were asked about the types of health information sought online. Respondents were given the choice to pick any of the given items where they can one or more.

Fourth, the reason for seeking online health information. To add on it, respondents were given the choice to pick any of the given items where they can one or more.

Lastly, the respondents then were asked to describe their preferred utilization of social media which includes Google, YouTube, WhatsApp, Facebook, Instagram and Twitter as the source to find health information online.

Data Analysis

The socio demographic factors were collected via the survey. The survey data were analyzed using SPSS Statistics version 23 software. The eHEALS score was analyzed, and the distribution was examined. Independent sample T-test was utilized to assess the eHEALS mean score and the p-value.

Content validity was done by the clinical lecturers of AMU who are experts in the fields of Community and Health, Internal Medicine, Paediatrics, and Obstetrics and Gynaecology. The content validity index (CVI) was 1.0. Moreover, Face validity was done to assess if the survey questions met the 3 categories for validation which are “Easy to answer”, “Appearance/Layout” and “Clarity of words”. The results revealed a mean of 99.4% under all 3 categories for eHEALS section, a mean of 100% for “Types of health information sought online”, a mean of 94.4% for “Reasons for seeking health information online”, and a mean of 99.7% for “Usage frequency of social media platform to seek health information. Internal Consistency Reliability was done by computing the Cronbach’s Alpha and was 0.972. Therefore, it was reliable.

Ethical Considerations

This study was approved by the Medical Research Ethics Committee (MREC) of Asia Metropolitan University (AMU), Muar Campus, Malaysia. Only those who were willing participate in the survey were chosen as samples. Participant's informed consent was taken individually. The participant's signature shows they have read and understood the information regarding this study on the cover letter. Thus, allowing us to conduct this study. All the information provided by the participants were kept confidential.

RESULTS

Table 1. Socio demographic characteristics between Bandar Maharani and Parit Jawa

Respondent's Demographic	Bandar Maharani		Parit Jawa	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
Age				
16-25	24	6.9	16	4.6
26-35	50	14.3	57	16.3
36-45	41	11.7	36	10.3
46-55	33	9.4	35	10
56-65	18	5.1	15	4.3
66-75	9	2.6	16	4.6
Gender				
Male	93	26.6	88	25.1
Female	82	23.4	87	24.9
Race				
Malay	81	23.1	118	33.7
Chinese	80	22.9	47	13.4
Indian	14	4	8	2.3
Others	0	0	2	0.6
Education Level				
No Formal Education	22	6.3	36	10.3
SPM	63	18	77	22
Diploma	49	14	36	10.3

Degree	36	10.3	22	6.3
Masters	5	1.4	4	1.1
Work Status				
Full Time	99	28.3	92	26.3
Part Time	11	3.1	13	3.7
Unemployed	3	0.9	4	1.1
Homemaker	27	7.7	30	8.6
Retired	24	6.9	24	6.9
Others	11	3.1	12	3.4

Demographic characteristics for the participants is shown in Table 1. The survey was participated by 350 participants from both Bandar Maharani and Parit Jawa. In terms of age, majority of our study sample, were in the age range 26-35. There were relatively more males than females involved in the survey whereby males represented 51.7% while females represented 48.3% of the total participants. The Malay participants are 56.8% of the total respondents, followed by Chinese (36.3%) and Indians (6.3%).

Table 2. Independent sample T test of eHEALS comparing Bandar Maharani and Parit Jawa.

Location	eHEALS mean score	Std. Deviation	P value
Bandar Maharani	29.21 (moderate)	9.80	.000
Parit Jawa	24.26 (moderate)	11.89	

The eHEALS score was calculated as the composite of all 8 items, ranging from 8 (lowest) to 40 (highest). The eHEALS was split into 3 categories, which is low eHealth literacy (8.0-14.0), moderate eHealth literacy (14.1-33.0) and high eHealth literacy (33.1-40.0). The mean score in Bandar Maharani is 29.21 which is higher than that in Parit Jawa (24.26). Both fall under moderate eHEALS level. Independent T-test was done to compare the eHealth literacy score between 2 groups (Bandar Maharani and Parit Jawa). A p-value of 0.000 was obtained which shows that the data is statistically significant.

Table 3. Types of health information sought online.

Types of health information sought online	Bandar Maharani, n (%)	Rankin	Parit Jawa, n (%)	Rankin ^{gs}
A disease or medical problem	4 (2.3)	8	9 (5.2)	8
Medical treatment or procedure	26 (14.9)	2	21 (12.1)	4
Diet, nutrition, and vitamins	25 (14.3)	3	40 (22.4)	2
Medication	23 (13.1)	5	12 (6.9)	6
Sports and exercise	45 (25.7)	1	23 (13.2)	3
A particular physician and hospital	21 (12.0)	6	12 (6.9)	6
Online support group	6 (3.4)	7	13 (7.5)	5
Never searched any of the above	25 (14.3)	3	45 (25.9)	1

The types of health information sought online by the participants is shown in Table 3. In Bandar Maharani the most sought type of health information online was “Sports and exercise” (25.7%), followed by “Medical treatment or procedure” (14.9%) then, “Diet, nutrition and vitamins” (14.3%) which was the same as the number of respondents who never searched anything (14.3%). However, the least sought was “A disease or medical problem” (2.3%) followed by “Online support group” (3.4%) then, “A particular physician and hospital” (12.0%). In Parit Jawa, the largest percentage of them never searched any health information online (25.9%). Thus, followed by “Diet, Nutrition and vitamins” (22.4%) then, “Sports and exercise” (13.2%). However, the least sought health information online in Parit Jawa is “A disease or medical problem” (5.2%), followed by both “Medication” and “A particular physician and hospital” (6.9%). Then “Online support group” (7.5%).

Table 4. Reasons for seeking health information online.

Reasons for seeking health information online	Bandar Maharani, n (%)	Ranking	Parit Jawa, n (%)	Ranking
To be more informed	8 (4.6)	8	13 (7.4)	6
Just out of interest	26 (14.9)	2	25 (14.3)	2
To help manage my own condition	21 (12.0)	4	22 (12.6)	3
To look for alternatives or additional treatment options	34 (19.4)	1	21 (12.0)	4
Clarify information that has been given to me by a health professional or advisor	20 (11.4)	5	18 (10.3)	5
To be informed to read	17 (9.7)	6	10 (5.6)	7
Insufficient information from health professional or advisor	8 (4.6)	8	8 (4.6)	8
Limited time with health professional or advisor	15 (8.6)	7	8 (4.6)	8
Disagree with health professional's advice	2 (1.1)	10	5 (2.9)	10
Never searched any of the above	24 (13.7)	3	45 (25.7)	1

The reasons for seeking health information online by the participants is shown in Table 4. In Bandar Maharani the leading reason for seeking health information online was “To look for alternatives or additional treatment options” (19.4%), followed by “Just out of interest” (14.9%) and 13.7% of the respondents never searched any of the above. However, the most obscure reason was “Disagree with health professional’s advice” (1.1%) followed by both “To be more informed” and “Insufficient information from health professional or advisor” (4.6%) then, “Limited time with health professional or advisor” (8.6%). In Parit Jawa, (25.7%) of the respondents never searched

any of the above. Thus, followed by “Just out of interest” (14.3%) then, “To help manage my own condition” (12.6%). However, the most obscure reason for seeking health information online in Parit Jawa is “Disagree with health professional’s advice” (2.9%) followed by both “Insufficient information from health professional or advisor” and “Limited time with health professional or advisor” (4.6%). Then, “To be informed to read” (5.6%).

Table 5. Usage frequency of social media platform to seek health information.

Usage frequency of social media platform to seek health information	Bandar Maharani, n (%)	Ranking	Parit Jawa, n (%)	Ranking
Google	17 (9.7)	5	24 (13.7)	4
YouTube	30 (17.1)	3	35 (20.0)	2
WhatsApp	47 (26.9)	1	39 (22.3)	1
Facebook	33 (18.9)	2	22 (12.6)	5
Instagram	19 (10.9)	4	13 (7.4)	6
Twitter	12 (6.8)	7	7 (4.0)	7
Never used any of the above	17 (9.7)	5	35 (20.0)	2

The Usage frequency of social media platform to seek health information is shown in Table 5. In Bandar Maharani, the most frequently used social media platform to seek health information was “WhatsApp” (26.9%), followed by “Facebook” (18.9%) then, “YouTube” (17.1%). However, the least frequently used social media platform was “Twitter” (6.8%) followed by “Google” (9.7%) which was the same as 9.7% of the respondents who never used any of the above then, “Instagram” (10.9%). In Parit Jawa, the most frequently used social media platform to seek health information was “WhatsApp” (22.3%), followed by “YouTube” (20.0%) which was the same as 20.0% of the respondents who never used any of the any of the social media then, “Google” (13.7%). On the other hand, the least frequently used social media platform was “Twitter” (4.0%), followed by “Instagram” (7.4%) then “Facebook” (12.6%).

DISCUSSION

In this study the mean score of eHEALS in Bandar Maharani is 29.21 while in Parit Jawa is 24.26. A similar study conducted by Britt, Collins, Wilson, Linnemeier, and Englebert (2017) in United Kingdom reported a mean of 31.92, higher than the current study. However, a previous study conducted by Mitsutake, Shibata, Ishii, and Oka (2012), in Japan reported a lower mean of 23.50. A higher eHeals mean score translates to a higher eHealth literacy. A study done by van Der Vaart et al. (2011) stated that higher eHeals score represents higher self-perceived eHealth literacy. According to our study, the most sought type of health information online in Bandar Maharani were “Sports and exercise” (25.7%) followed by “Medical treatment or procedure” (14.9%). Meanwhile, there were minute differences in the most sought type of health information online in

Parit Jawa. Majority of respondents never searched any health information online, (25.9%). Thus, participants from Parit Jawa prefer not to search anything on the internet but rely on doctors. The findings of this study is supported by a previous findings done by Qiu, Ren, Liu, Yin, & Ren (2019) in China where the Chinese rural residents do not believe in online health information yet and does not access internet to search information online. In both Parit Jawa and Bandar Maharani, the least sought type of information online is “A disease or medical problem” (5.2%) and (2.3%) respectively. This finding contradicts an earlier study done by Wong (2017) in China which shows that “A disease or medical problem” is the top most searched category (70.5%). Following that, “Online support group” is the second least type of health information sought among the participants of Parit Jawa and Bandar Maharani (7.5%) and (3.4%) respectively. This result shows that people in Parit Jawa and Bandar Maharani do not find online support groups helpful. In contrary to this finding, a study done by Grandinetti (2000) in Europe found that users rated “Online support group” more helpful than physicians in numerous ways.

There were various reasons for people to seek health information online. In Bandar Maharani, a majority of respondents chose “To look for alternatives or additional treatment options” (19.4%). However, in Parit Jawa 25.4% of participants never searched any health information online. Followed by that, the second leading reason for seeking online health information in both Parit Jawa and Bandar Maharani is “Just out of interest”. The least sought reason for seeking health information online in both Parit Jawa and Bandar Maharani is “Disagree with health professional’s advice”. Taking into account that the least number of respondents chose this category, it proves that even if there were vast health information online, patients still trust their physician more. A similar study that supports this finding which was conducted by Gabriel et al., (2012) in Hong Kong stated that doctors were more powerful in terms of medical treatment and advice.

A previous study done by Ifhthikar and Abaalkhail (2017) showed that “WhatsApp” was the most used social media by people to receive health information compared to other social media. Our study also discovered that both in Bandar Maharani and Parit Jawa, the most utilized social media to seek online health information was “WhatsApp”. An earlier study conducted by Wingfield, Isaac, and Benner (2016) in New York, where “Facebook” was the least reliable source of health information despite the fact that it is the most widely known platform and also the most generally used platform for news. On the contrary, Facebook was found to be the second most used social media to seek health information online in Bandar Maharani (18.9%). The second most used social media to seek health information online in Parit Jawa is “YouTube” (20%). People in Parit Jawa prefer using “YouTube” after “WhatsApp”. According to previous study done by Tubaishat and Habiballah (2016) in Jordan, it was suggested that pharmaceutical corporations have an influence on “YouTube” and are often using it to advertise their pharmaceutical products and information. “YouTube” also includes records on which users can create and add video to categorize their opinions on health care topics. Video-based self-instruction, that is, learning from a video depicting a procedure, had been found to be a wonderful way to recognize a certain method.

CONCLUSIONS

This study revealed that most of the participants in both the urban (Bandar Maharani) and rural (Parit Jawa) areas were having moderate eHealth literacy score. Also, the most sought health information online in both the study locations was “Sports and exercise”. However, there is also a

large percentage of people who do not seek health information online. In addition, the primary reason for searching health information online is “To look for alternatives for additional treatment options”. Furthermore, the most used social media platform to seek health information online is “Whatsapp” followed by “Youtube”. Our exploration of social media as platforms for eHealth may give us the guidance on how to best reach the intended people and stimulate further research.

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